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AUTHOR Brack, Greg; And Others
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ABSTRACT

A counselor's ability to form an accurate and complex clinical hypothesis which models the client and guides the counseling process is an important aspect of counseling. This study was conducted using Masters level counseling students to explore clinical hypothesis formation and counseling effectiveness in a semi-natural counseling task. Each of the counseling students (N=27) acted as a counselor to one of her/his classmates for four 45-minute sessions. Data were gathered at the end of the second session. Student counselors completed a Clinical Hypothesis Rating Form and student-clients rated the counselor on the Client Rating Form-Short. The results indicated that students could construct quality hypotheses and that such hypotheses were related to clients' perceptions of the counselors. Four of the clinical hypothesis components predicted 60% of the variance in the total Client Rating Form-Short score, with each subscale having its own predictor. The findings suggest that different hypothesis components are differentially related to the counselor attributes of expertness, attractiveness, and trustworthiness. (Author/NB)

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The Relationship Between Counseling Students' Hypotheses and Performance Characteristics

Greg Brack, Ph.D.
Georgia State University

D. Keith Morran, Ph.D.
Indiana University-Purdue University at Indianapolis

DeWayne J. Kurpius, Ed.D.
Indiana University

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Abstract

A counselor's ability to form an accurate and complex clinical hypothesis which models the client and guides the counseling process is an important aspect of counseling. The present study used Masters level counseling students to explore clinical hypothesis formation and counseling effectiveness in a semi-natural counseling task. Results indicated that students can construct quality hypotheses and such hypotheses are related to clients' perceptions of the counselors. Four of the clinical hypothesis components predicted 60% of the variance in total CRF-S score, and each CRF-S subscale had its own unique predictor. The results suggest that different hypothesis components are differentially related to expertness, attractiveness, and trustworthiness.

The Relationship Between Counseling Students' Hypotheses and Performance Characteristics

What guides a counselor during the therapeutic process? Most professional counselors believe that a counselor's cognitive processing is a vital guide for the counselor's work, and there is important research to verify these beliefs.

When Fuqua, Johnson, Anderson and Newman (1984) examined the literature on counselor cognitive processing they found that much of the research fell into two preliminary tracks. The first set of studies looked at individual differences in cognitive strategies and the relationship of such differences to counseling performance. Other studies examined the utility of training counseling students in different cognitive strategies and the resultant differences in performance. In general, Fuqua et al. found that both sets of articles were able to account for performance differences during counseling tasks.

The research has continued to validate Fuqua et al.'s (1984) analysis. Several studies have attempted to map the cognitive activity of counselors through the use of advanced statistical sampling and analysis-multidimensional scaling (MDS). Hill and O'Grady (1985) found that counselor intentions fell into two dimensions: support/assessment versus change, and relationship problems

versus therapeutic work.

Morran, Kurpius, and Brack (1989) analyzed the naturally occurring thoughts of counselors in a semi-naturalistic counseling session. Prior to an MDS analysis, these authors used a classification which rated thoughts into 14 categories. The classification system was validated by first asking counseling experienced raters to take the thoughts and group them into categories. The categories identified by the first raters were then given to a second group and tested for reliability. Morran et al. found that the categories could be reliably rated and seemed to encompass the diversity of counselor cognitive activity. Next, Morran et al. used MDS to identify two more global dimensions which accounted for the majority of variance in the 14 categoires. The two dimensions (attending/assessment versus information seeking and integrative understanding versus intervention planning) were similar to those of Hill and O'Grady (1985). Thus, despite widely divergent methodology and sampling techniques, these two studies suggest a similar cognitive structure among counseling cognitive processing.

Brack, Morran, and Kurpius (1989) examined the same counselor cognitions analyzed by Morran et al. but used cluster analysis to examine relationships among the categories. Brack et al. indicated that the 14 categories represent 8 main clusters which would seem to suggest a

natural transition in cognitive processing. Brack et al. hypothesized the following cycle of counselor cognitive processing in session: attending to self and client; processing this information into an empathetic framework of the client; additional search for relevant information; formulating hypotheses in order to integrate and ascribe meaning to client related information; deciding upon appropriate courses of action in light of such conceptualizations; and the self-evaluation of an intervention's effectiveness. Also, Brack et al. reported that thoughts focusing on "self-instruction" were particularly related to increased counselor performance.

Thus, much progress has been made on investigating the role of counselor cognition as it is related to the counseling process. Further, the type of cognitive activity called "clinical hypothesis formation" seems particularly important to delineate. For instance, Martin, Slemon, Hiebert, Hallberg, and Cummings (1989) found that experienced counselors acquired more complex conceptualizations of the counseling process and client issues than novice counselors. Martin et al. attributed this trend to the fact that experienced counselors had acquired more general knowledge about counseling. Novice counselors lacked this more abstract knowledge base in which to derive their conceptualizations. Further, Martin

et al. found that specific intentions were related to specific counseling behaviors in predictable sequences, suggesting a direct cognition/behavior link. The importance of such work lies in demonstrating the close relationship between what goes on the counselor's head and what the counselor does in a counseling related task.

Indeed, Kurpius, Benjamin, and Morran (1985) found that counseling students taught to monitor and direct their cognitions performed significantly better than control students on a counseling response. Kurpius et al.'s self-instruction strategy supported Ochiltree et al's (1975) earlier results, but Kurpius et al. expanded the findings by comparing self-instruction to a more knowledge based approach (i.e., teaching students clinical hypothesis formation skills). Monitoring and directing the cognitive flow was superior to knowledge based interventions alone. Such results would also suggest that controlling cognitive processing may be superior to merely developing new schemata. Morran (1986) followed this research by comparing the counselor's clinical hypothesis to performance, and again found that the quality of the hypothesis predicted both performance and client satisfaction. Morran believed that high quality hypotheses allowed counselors to identify and integrate information about the client's issues and then to make more effective and efficent use of the session.

The purpose of the present study is to extend the investigation of clinical hypotheses. While the work of Kurpius, Morran, and Benjamin (1985) and Morran (1986) had established the technology to measure clinical hypothesizing skill, little work had investigated the underlying components of a hypothesis, and how such components relate to some form of counselor performance.

METHOD

Subjects, Procedures, and Instrumentation: The subjects for the study consisted of 27 Masters level graduate students, four males and 23 females, enrolled in a Laboratory and Techniques of Counseling class at a large midwestern university. As a component of the class, at the end of the semester, students acted as counselors to one of their classmates for four 45 minute sessions. The student clients were told they could use a personal issue (of minor magnitude) or role play a client having an issue. The data used in the present study was gathered at the end of the second session.

Two instruments were used in the present study. First, the student counselors completed a Clinical Hypothesis Rating Form (CHRF). The CHRF was derived from the research of Kupius, Benjamin, and Morran (1985) and Morran (1986) who defined the components of an accurate clinical hypothesis. The CHRF describes the nature of a

clinical hypothesis as a "working model of the client" and operationalizes this concept as the "integration of the counselor's observations, assumptions, and inferences...to establish a tentative explanation...of the client's concern or issue." Next, the CHRF asks the counselor to respond to three tasks:

1. Write a hypothesis describing the client and the client's concern;
2. Describe any factors which support the hypothesis;
3. Compile a list questions needed to test the accuracy and validity of the hypothesis.

These responses when then rated by independent judges on the following nine dimensions (reliability >.90).

1. The number of distinct, non-redundant, and relevant elements in the hypothesis statement were totaled for a frequency count.
2. The quality of these elements were assessed by examining the elements for the presence of four domains necessary to describe a complete hypothesis: client behavior, client internal factors, external factors, and associations between these domains. Therefore, high quality elements would have all four, and low quality elements have none of these domains.
3. The number of supportive statements which substantiate the hypothesis were counted.
4. The quality of these supportive statements were assessed

by examining four domains: client statements, kinesthetic behavior, social-psychological issues, and the counselor-client relationship. A high quality support statement would have all four while a low quality support statement would have none of these domains.

5. The total number of distinct and nonredundant questions were totaled.

6. The number of questions judged relevant to the stated hypothesis was counted.

7. The number of questions judged as representing exploration in a totally new or different domain were counted.

8. The overall quality of the hypothesis was rated on a scale of 1-5 with 1 labeled as "low level of overall quality of thought and clarity of expression" and 5 labeled as "high level of thought and clarity of expression."

9. Finally, counselors rated their level of confidence concerning the accuracy of their hypotheses on a scale of 1 (not at all confident) to 8 (extremely confident).

Following the session, clients rated the counselor on the Client Rating Form-Short (Corrigan & Schmidt, 1983). The CRF-S contains 12 items which are designed to assess three factors: expertness, trustworthiness, and attractiveness. Each item is scored from 1-7 ("not very" to "very"). In a review of the research on the CRF-S,

Ponterotto and Furlong (1985) reported reliability data ranges around .90, and construct validity has been established through the use of confirmatory factor analysis.

RESULTS

The descriptive statistics are listed in Table 1. Most of the counselors hypotheses were in the mid-range of quality with the overall range between the lowest and highest possible scores. The average hypothesis contained more than eight elements with these elements having most if not all of the identified domains. Further, over six support elements were present to back up the hypothesis, but on average only about two domains were identified with the support statements. Thus, the support statements were not as comprehensive as the elements. The average counselor also reported about seven questions which needed to be addressed for confirmation of the hypothesis, most of which were judged relevant to the hypothesis. These questions rarely broached new areas of investigation which would suggest that, for the most part, the counselors were more involved in verifying identified hypotheses and not in investigating new areas. Finally, the counselors were judged by the client as generally positive with mean CRF-S scores around the lower twenties, and total CRF-S score in the upper sixties.

The relationships between hypothesis and CRF-S are

also of interest (see Table 2). First, five of the nine hypothesis measures are related to all four CRF-S measures: number and quality of elements, overall quality, number of questions, and the number of relevant questions. Also, the number of support statements is related to Trust. Only quality of support statements, number of new questions, and confidence are unrelated to any of the CRF-S factors. Further, in all cases where there is a significant relationship, the better the hypothesis characteristic the higher the CRF-S score. Finally, the three CRF-S subscale scores are highly inter-related except for Expertness and Attractiveness which are significantly related, but only .38.

Table 3 lists The forward stepwise regression results for the three CRF-S subscales and the overall CRF-S total scores. Four hypothesis components predicted 60% of the variance for total CRF-S score. Quality of elements had the highest Beta, while quality of support statements was loaded negatively. Yet the individual subscales each showed a different pattern of prediction. For instance, Expertness was predicted only by the quality of elements, while Attractiveness was related to the number of relevant questions. Trustworthiness, though, required a three step model with overall hypothesis quality entered on the first step. Also, Trustworthiness had quality of support

statements with a negative beta weight. Four of the nine identified clinical hypothesis components predicted over half the variance of total CRF-S scores, and three of the hypothesis components predicted approximately half of the variance of Trustworthiness. (Note: All regression equations significant at p=.01.) Thus, the regression equations varify that there is a relationship between clinical hypothesizing skill and client ratings.

DISCUSSION

The results again confirm that hypothsizing skills are related to counselor performance, and these results raise some rather interesting implications. Before these implications are reviewed, the study's limitations will be discussed.

An important limitation of the this study is its reliance on counseling students in a semi-structured counseling task. The actual performance and hypothesizing skills of professional counselors with "live" clients need to be studied before the results may be generalized to more naturalistic settings. Secondly, a larger subject pool drawn from other campus settings is needed to confirm these trends. Finally, the only measure of counselor performance reported in this study is the CRF-S factors. Other measures of counseling skill, including direct observation, would add validity to any conclusions drawn from this study. Thus, with such limitations in mind, the implications will

be discussed below.

Clearly, the data supports that with beginning level Masters counseling students, hypothesis skills relate directly to the client's positive view of the counselor. Over half of the variance in total CRF-S scores can be accounted for with four of the identified clinical hypothesis components. The CRF-S is built upon the social influence model of counseling (Corrigan & Schmidt, 1983). Strong (1968) used the social psychology literature on attitude change to demonstrate that the counselor's perceived attractiveness, trust, and expertness could serve as stimuli for the change process. Counselors with such characterisitcs were believed to exert more influence and become stronger change agents. Strong believed that once the counselor's credibility was established, the client would become more involved in the counseling process which would lead to greater depth of work (and ultimately change).

The present study indicates that counselors who can establish their credibility with clients tend to have better clinical hypotheses. Why? Strong (1968) believed that clients would reveal more to credible counselors. Such information would then seem to provide counselors with more information to build better "models" of their clients. This would explain at least why Trust and Attractiveness are related to the clinical hypothesis. Yet, what about

Expertness? Certainly if the clients were revealing more information and the counselor can form better hypotheses, subsequent counselor statements would seem to be more "on target" and thus increase the client's perceptions of the counselor as expert. Of course, without more research and time sampling analysis of the actual counseling sessions, it is impossible to assign causality to the data.

The results also suggest that each of the CRF-S factors is differentially related to a unique hypothesis component. The quality of the hypothesis accounts for 30% of the variance in Expertness which makes sense. The elements of a hypothesis represent its complexity (i.e., the more elements, the more facets of the hypothesis). The quality of elements measures the comprehensiveness of these facets. The regression indicates that as counselors' hypotheses cover more of the client's behavior, internal/external factors, and associations between these perceived expertness increases. Thus, clients do seem to perceive their counselors differently when the counselors have formed more complex and comprehensive views of their clients.

Attractiveness is also related to a hypothesizing skill-number of relevant questions. Questions reflect one of the counselor's means of varifying the clinical hypothesis. When such identified questions are judged relevant to a hypothesis, clients find the counselor more attractive. Attractiveness is a measure of how well the client likes and feels compatible

with the counselor (Strong, 1968). The regression demonstrates that this counselor/client bond is associated with the counselor's ability to explore and confirm hypotheses about that client. Such makes sense as counselors who ask tangential or irrelevant question make the client uncomfortable and uncertain of the counselor's intent. Also, relevant questions utilized in session make lead the client to deeper insights. Finally, a counselor's ability to generate and use these questions may make the client feel more understood and "in touch" with that counselor.

Yet, of the three CRF-S subscales, Trustworthiness is the one most associated with hypothesizing skill. Overall quality of the hypothesis was the first variable entering the regression. Strong (1968) stated that trust was established when change agents (i.e., counselors) use honesty, sincerity, and openness in their communications. Further, Strong believed that trust can over-ride the effects of low expertness. The results would seem to imply that counselors' who form an overall high quality cognitive model of their clients are also able to establish and maintain an open flow of communication. Interestingly, though, the quality of support statements is inversely related to trust, as to total CRF-S score as well. Thus, the ability to generate a strong hypothesis facillitates trust, but the ability to substantiate that hypothesis seems

to undermines this bond. Quality of support statements includes the four factors of client statements, kinesthetic behavior, social-psychological issues, and client/counselor relationship. Subsequent research will need to assess whether one of these four factors actually serves to inhibit the establishment of trust, or whether counselors who focus on substatiation of a hypothesis actually communicate differently. It is possible that "substantiators" become dogmatic and rigid in their communication patterns and thus appear less open to client communications which do not fit the hypothesis. Finally, as with Expertness, the quality of the elements also is an important predictor with Trustworthiness. Therefore, the quality components of the hypothesis measure seem most related to the client perceiving the counselor as trustworthy.

In summary, even at the level of laboratory classes in counseling, hypothesizing skills are important. Being able to form a cognitive model of the client is related to how that client views the counselor. Since the CRF-S is based on perceived communicator effectivenss, it would be useful in future studies to also monitor the counselor's non-verbal behaviors and other associated skills to determine if hypothesizing skill relates to these other variables as well. Clearly, though, the accumulating evidence from the literature demonstrates that counselor training needs to address not only the behavioral micro-skills included in

most laboratory courses, but also what may now be termed the "cognitive micro-skills" of which hypothesis building is included.

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Table 1

Descriptive Statistics for the Variables Used in the Present Study

	Mean	S.D.	Range
Number of Elements	8.5	4.4	2-19.5
Quality of Elements	3.5	0.9	1-4
Number of Support Statements	6.2	3.4	0.5-15.0
Quality of Support Statements	2.2	0.9	1-4
Overall Quality	3.3	1.0	1-5
Number of Questions	7.1	3.5	2-17.0
Number of Relevant Questions	6.6	3.3	2-15.0
New Questions	0.5	0.8	0-3.5
Confidence	6.0	0.9	4-8
Expertness	19.6	5.2	9-28
Attractiveness	23.5	3.6	14-28
Trust	23.9	3.4	16-28
Total CRF-S	67.0	10.4	46-84

Table 2

Correlations of Hypothesis components with the CRF-S factors

	Expert	Attract	Trust	Total
Number of Elements	.43*	.43*	.42*	.49**
Quality of Elements	.57**	.39*	.57**	.60**
Number of Support Statements	.09	.37	.38*	.29
Quality of Support Statements	.11	-.01	.11	.09
Overall Quality	.50**	.41*	.58**	.57**
Number of Questions	.46*	.47*	.52**	.56**
Number of Relevant Questions	.53**	.48*	.55**	.60**
New Questions	-.17	.08	.02	-.05
Confidence	-.14	-.06	-.11	-.12
Expertness		.38*	.75**	.87**
Attractiveness			.77**	.78**
Trustworthiness				.95**

*=p<.05 **p<.01

Table 3

Stepwise Regression of Hypothesis Components on CRF-S Scales

Dependent Variable: Total CRF-S Score

Step	Variable	R	Adjusted R^2	Beta
1	Quality of Element	.60	.33	.60
2	Number of Relevant Questions	.71	.46	.42
3.	Quality of Support Statements	.77	.54	-.34
4.	Number of Support Statements	.81	.60	.29

Dependent Variable: Expertness

Step	Variable	R	Adjusted R^2	Beta
1	Quality of Element	.57	.30	.57

Dependent Variable: Attractiveness

Step	Variable	R	Adjusted R^2	Beta
1	Number of Relevant Questions	.48	.20	.48

Table 3 (cont.)

Dependent Variable: Trustworthiness

Step	Variable	R	Adjusted R^2	Beta
1	Overall Quality	.58	.31	.58
2	Quality of Support Statements	.66	.39	-.41
3.	Quality of Elements	.73	.47	.40